

IN THE CLAIMS

Please cancel claims 1-30 without prejudice or disclaimer, and substitute new Claims 31-60 therefor as follows:

Claims 1-30 (Cancelled).

31. (New) A process for producing a metal wire comprising a steel core and a metal coating layer in a radially outer position with respect to said steel core, the metal coating layer comprising an alloy made of at least two metal components, comprising the steps of:

coating the steel core by depositing onto said steel core separate layers, each layer being made of at least one metal component of said at least two metal components, each layer having a thickness not greater than 50 nm; and
drawing the coated core to form said alloy.

32. The process according to claim 31, wherein said thickness is 0.5 nm to 20 nm.

33. (New) The process according to claim 32, wherein said thickness is 1.0 nm to 10 nm.

34. (New) The process according to claim 31, wherein the step of coating is carried out by alternately depositing onto said steel core said separate layers.

35. (New) The process according to claim 31, wherein at least one of the separate layers is made of an alloy made of said at least two metal components.

36. (New) The process according to claim 31, wherein the step of coating is carried out by means of a plasma deposition technique.

37. (New) The process according to claim 36, wherein said plasma deposition technique is selected from: sputtering, evaporation by voltaic arc, plasma spray and plasma enhanced chemical vapor deposition.

38. (New) The process according to claim 36, wherein the step of coating is carried out in at least one vacuum deposition chamber at a first predetermined pressure.

39. (New) The process according to claim 38, wherein said first predetermined pressure is about 10^{-3} to about 10^{-1} mbar.

40. (New) The process according to claim 31, wherein the steel core is continuously coated and drawn while being conveyed at a speed of about 10 to about 80 m/min.

41. (New) The process according to claim 31, wherein the steel core has a predetermined initial diameter, the coating layer has a predetermined initial thickness, and the step of drawing the coated core is carried out until the steel core has a final diameter smaller than said predetermined initial diameter and the metal coating layer has a final thickness smaller than said predetermined initial thickness.

42. (New) The process according to claim 41, wherein the predetermined initial thickness of the coating layer is about 0.5 to about 2.0 mm.

43. (New) The process according to claim 41, wherein the final thickness of the coating layer is about 80 to about 350 nm.

44. (New) The process according to claim 41, wherein the predetermined initial diameter of the steel core is about 0.85 to about 3.00 mm.

45. (New) The process according to claim 41, wherein the predetermined final diameter of the steel core is 0.10 to 0.50 mm.

46. (New) The process according to claim 38, further comprising a step of conveying the steel core in at least one pre-chamber at a second predetermined pressure higher than said first predetermined pressure, said pre-chamber being arranged upstream of said at least one vacuum deposition chamber.

47. (New) The process according to claim 46, wherein said second predetermined pressure is about 0.2 mbar to about 10 mbar.

48. (New) The process according to claim 38, wherein the steel core passes through a sequence of at least two cathodes arranged inside the vacuum deposition chamber, each cathode being made of a metal component of said at least two metal components to be deposited onto the steel core.

49. (New) The process according to claim 38, wherein the steel core passes through the vacuum chamber according to multiple passages.

50. (New) The process according to claim 31, wherein said alloy forming the coating layer is different from the steel forming the core.

51. (New) The process according to claim 31, wherein the metals of the coating layer are selected from: copper, zinc, manganese, cobalt, tin, molybdenum, iron, nickel, aluminum and alloys thereof.

52. (New) The process according to claim 51, wherein the coating layer is made of brass.

53. (New) The process according to claim 52, wherein the brass has a copper content of about 60 to about 72% by weight.

54. (New) The process according to claim 31, further comprising the step of submitting the steel core to at least one surface treatment.

55. (New) The process according to claim 54, wherein said at least one surface treatment comprises the step of pickling the core in a pickling bath.

56. (New) The process according to claim 55, further comprising the step of washing the pickled core in water.

57. (New) The process according to claim 56, further comprising the step of drying the washed core.

58. (New) The process according to claim 31, further comprising the step of thermally treating the steel core.

59. (New) The process according to claim 58, wherein the step of thermally treating the steel core is carried out after the step of submitting the steel core to the at least one surface treatment

60. (New) The process according to claim 58, further comprising the step of dry drawing the steel core before carrying out the thermal treatment step.